Title: LOW-TEMPERATURE GROWN HIGH QUALITY ULTRA-THIN CoTiO3 GATE DIELECTRICS

## IN THE CLAIMS

Please amend the claims as follows:

1. (Previously Presented) A method of forming a gate oxide on a transistor body region, comprising:

evaporation depositing a metal alloy layer on the body region wherein at least a portion of the alloy layer is amorphous; and

oxidizing the metal alloy layer to form a metal oxide layer on the body region.

- 2. (Original) The method of claim 1, wherein evaporation depositing the metal alloy layer includes evaporation depositing cobalt and titanium.
- 3. (Original) The method of claim 1, wherein evaporation depositing the metal alloy layer includes evaporation depositing by electron beam evaporation.
- 4. (Original) The method of claim 3, wherein electron beam evaporation depositing the metal alloy layer includes electron beam evaporation of a single metal alloy target.
- 5. (Original) The method of claim 1, wherein evaporation depositing the metal alloy layer includes evaporation depositing at an approximate substrate temperature range of 100 150° C.
- 6. (Original) The method of claim 1, wherein oxidizing the metal alloy layer includes oxidizing at a temperature of approximately 400° C.
- 7. (Original) The method of claim 1, wherein oxidizing the metal alloy layer includes oxidizing with atomic oxygen.
- 8. (Original) The method of claim 1, wherein oxidizing the metal alloy layer includes oxidizing using a krypton (Kr)/oxygen (O<sub>2</sub>) mixed plasma process.

Title: LOW-TEMPERATURE GROWN HIGH QUALITY ULTRA-THIN CoTiO3 GATE DIELECTRICS

9. (Previously Presented) A method of forming a gate oxide on a transistor body region, comprising:

evaporation depositing a metal alloy layer on the body region wherein at least a portion of the alloy layer is amorphous; and

oxidizing the metal alloy layer using a krypton(Kr)/oxygen (O<sub>2</sub>) mixed plasma process to form a metal oxide layer on the body region.

- 10. (Original) The method of claim 9, wherein evaporation depositing the metal alloy layer includes evaporation depositing cobalt and titanium.
- 11. (Original) The method of claim 9, wherein evaporation depositing the metal alloy layer includes evaporation depositing by electron beam evaporation.
- 12. (Original) The method of claim 11, wherein electron beam evaporation depositing the metal alloy layer includes electron beam evaporation of a single metal alloy target.
- 13. (Original) The method of claim 9, wherein evaporation depositing the metal alloy layer includes evaporation depositing at an approximate substrate temperature range of 150 400 °C.
- 14. (Withdrawn) A method of forming a transistor, comprising: forming first and second source/drain regions; forming a body region between the first and second source/drain regions; evaporation depositing a metal alloy layer on the body region wherein at least a portion

evaporation depositing a metal alloy layer on the body region wherein at least a portion of the alloy layer is amorphous;

oxidizing the metal alloy layer to form a metal oxide layer on the body region; and coupling a gate to the metal oxide layer.

Serial No. 10/028643

Filed: December 20, 2001

Title: LOW-TEMPERATURE GROWN HIGH QUALITY ULTRA-THIN CoTiO3 GATE DIELECTRICS

- 15. (Withdrawn) The method of claim 14, wherein evaporation depositing the metal alloy layer includes evaporation depositing cobalt and titanium.
- 16. (Withdrawn) The method of claim 14, wherein evaporation depositing the metal alloy layer includes evaporation depositing by electron beam evaporation.
- 17. (Withdrawn) The method of claim 16, wherein electron beam evaporation depositing the metal alloy layer includes electron beam evaporation of a single metal alloy target.
- 18. (Withdrawn) The method of claim 14, wherein evaporation depositing the metal alloy layer includes evaporation depositing at an approximate substrate temperature range of 100 150° C.
- 19. (Withdrawn) The method of claim 14, wherein oxidizing the metal alloy layer includes oxidizing at a temperature of approximately 400 °C.
- 20. (Withdrawn) The method of claim 14, wherein oxidizing the metal alloy layer includes oxidizing with atomic oxygen.
- 21. (Withdrawn) The method of claim 14, wherein oxidizing the metal alloy layer includes oxidizing using a krypton (Kr)/oxygen (O2) mixed plasma process.
- 22. (Withdrawn) A method of forming a memory array, comprising:

forming a number of access transistors, comprising:

forming first and second source/drain regions;

forming a body region between the first and second source/drain regions;

evaporation depositing a metal alloy layer on the body region;

oxidizing the metal alloy layer to form a metal oxide layer on the body region wherein at least a portion of the alloy layer is amorphous;

Title: LOW-TEMPERATURE GROWN HIGH QUALITY ULTRA-THIN COTIO3 GATE DIELECTRICS

coupling a gate to the metal oxide layer;

forming a number of wordlines coupled to a number of the gates of the number of access transistors:

forming a number of sourcelines coupled to a number of the first source/drain regions of the number of access transistors; and

forming a number of bitlines coupled to a number of the second source/drain regions of the number of access transistors.

- (Withdrawn) The method of claim 22, wherein evaporation depositing the metal alloy 23. layer includes evaporation depositing cobalt and titanium.
- 24. (Withdrawn) The method of claim 22, wherein evaporation depositing the metal alloy layer includes evaporation depositing by electron beam evaporation.
- 25. (Withdrawn) The method of claim 24, wherein electron beam evaporation depositing the metal alloy layer includes electron beam evaporation of a single metal alloy target.
- 26. (Withdrawn) The method of claim 22, wherein evaporation depositing the metal alloy layer includes evaporation depositing at an approximate substrate temperature range of 100 -150° C.
- 27. (Withdrawn) The method of claim 22, wherein oxidizing the metal alloy layer includes oxidizing at a temperature of approximately 400 °C.
- 28. (Withdrawn) The method of claim 22, wherein oxidizing the metal alloy layer includes oxidizing with atomic oxygen.
- 29. (Withdrawn) The method of claim 22, wherein oxidizing the metal alloy includes oxidizing using a krypton (Kr)/oxygen (O2) mixed plasma process.

Serial No. 10/028643

Filed: December 20, 2001

Title: LOW-TEMPERATURE GROWN HIGH OUALITY ULTRA-THIN CoTiO3 GATE DIELECTRICS

30. (Withdrawn) A method of forming an information handling system, comprising: forming a processor;

forming a memory array, comprising:

forming a number of access transistors, comprising:

forming first and second source/drain regions;

forming a body region between the first and second source/drain regions; evaporation depositing a metal alloy layer on the body region wherein at least a portion of the alloy layer is amorphous;

oxidizing the metal alloy layer to form a metal oxide layer on the body region;

coupling a gate to the metal oxide layer;

forming a number of wordlines coupled to a number of the gates of the number of access transistors;

forming a number of sourcelines coupled to a number of the first source/drain regions of the number of access transistors;

forming a number of bitlines coupled to a number of the second source/drain regions of the number of access transistors; and

forming a system bus that couples the processor to the memory array.

- 31. (Withdrawn) The method of claim 30, wherein evaporation depositing the metal alloy layer includes evaporation depositing cobalt and titanium.
- 32. (Withdrawn) The method of claim 30, wherein evaporation depositing the metal alloy layer includes evaporation depositing by electron beam evaporation.
- 33. (Withdrawn) The method of claim 32, wherein electron beam evaporation depositing the metal alloy layer includes electron beam evaporation of a single metal alloy target.

Title: LOW-TEMPERATURE GROWN HIGH QUALITY ULTRA-THIN CoTiO3 GATE DIELECTRICS

- 34. (Withdrawn) The method of claim 30, wherein evaporation depositing the metal alloy layer includes evaporation depositing at an approximate substrate temperature range of 100 150 °C.
- 35. (Withdrawn) The method of claim 30, wherein oxidizing the metal alloy layer includes oxidizing at a temperature of approximately 400 °C.
- 36. (Withdrawn) The method of claim 30, wherein oxidizing the metal alloy layer includes oxidizing with atomic oxygen.
- 37. (Withdrawn) The method of claim 30, wherein oxidizing the metal alloy layer includes oxidizing using a krypton (Kr)/oxygen (O2) mixed plasma process.
- 38. (Withdrawn) A transistor, comprising:
  - a first and second source/drain region;
- a body region located between the first and second source/drain regions, wherein a surface portion of the body region has a surface roughness of approximately 0.6 nm;
- a cobalt-titanium alloy oxide dielectric layer coupled to the surface portion of the body region, wherein at least a portion of the cobalt-titanium alloy oxide dielectric layer is amorphous; and
  - a gate coupled to the cobalt-titanium alloy oxide dielectric layer.
- 39. (Withdrawn) The transistor of claim 38, wherein the cobalt-titanium alloy oxide dielectric layer includes CoTiO3.
- 40. (Withdrawn) The transistor of claim 38, wherein the surface portion of the body region is oriented in the (100) crystalline plane.

Title: LOW-TEMPERATURE GROWN HIGH QUALITY ULTRA-THIN CoTiO3 GATE DIELECTRICS

- 41. (Withdrawn) The transistor of claim 38, wherein the surface portion of the body region is oriented in the (111) crystalline plane.
- 42. (Withdrawn) The transistor of claim 38, wherein the cobalt-titanium alloy oxide dielectric layer is substantially amorphous.
- 43. (Withdrawn) A memory array, comprising:

a number of access transistors, comprising:

a first and second source/drain region;

a body region located between the first and second source/drain regions, wherein a surface portion of the body region has a surface roughness of approximately 0.6 nm;

a cobalt-titanium alloy oxide dielectric layer coupled to the surface portion of the body region, wherein at least a portion of the cobalt-titanium alloy oxide dielectric layer is amorphous;

a gate coupled to the cobalt-titanium alloy oxide dielectric layer;

a number of wordlines coupled to a number of the gates of the number of access transistors;

a number of sourcelines coupled to a number of the first source/drain regions of the number of access transistors; and

a number of bitlines coupled to a number of the second source/drain regions of the number of access transistors.

- 44. (Withdrawn) The memory array of claim 43, wherein the cobalt-titanium alloy oxide dielectric layer includes CoTiO3.
- 45. (Withdrawn) The memory array of claim 43, wherein the cobalt-titanium alloy oxide dielectric layer exhibits a dielectric constant (k) of approximately 40.

Title: LOW-TEMPERATURE GROWN HIGH QUALITY ULTRA-THIN CoTiO3 GATE DIELECTRICS

- 46. (Withdrawn) The memory array of claim 43, wherein the cobalt-titanium alloy oxide dielectric layer is substantially amorphous.
- 47. (Withdrawn) An information handling device, comprising:
  - a processor;
  - a memory array, comprising:
    - a number of access transistors, comprising:
      - a first and second source/drain region;
- a body region located between the first and second source/drain regions, wherein a surface portion of the body region has a surface roughness of approximately 0.6 nm; a cobalt-titanium alloy oxide dielectric layer coupled to the surface portion of the body region, wherein at least a portion of the cobalt-titanium alloy oxide dielectric layer is amorphous;
- a gate coupled to the cobalt-titanium alloy oxide dielectric layer;
  a number of wordlines coupled to a number of the gates of the number of access
  transistors;
- a number of sourcelines coupled to a number of the first source/drain regions of the number of access transistors;
- a number of bitlines coupled to a number of the second source/drain regions of the number of access transistors; and
  - a system bus coupling the processor to the memory device.
- 48. (Withdrawn) The information handling device of claim 47, wherein the cobalt-titanium alloy oxide dielectric layer includes CoTiO3.
- 49. (Withdrawn) The information handling device of claim 47, wherein the cobalt-titanium alloy oxide dielectric layer exhibits a dielectric constant (k) of approximately 40.

Title: LOW-TEMPERATURE GROWN HIGH QUALITY ULTRA-THIN COTIO3 GATE DIELECTRICS

- 50. (Withdrawn) The information handling device of claim 47, wherein the cobalt-titanium alloy oxide dielectric layer is substantially amorphous.
- 51. (Withdrawn) A transistor formed by the process, comprising:

forming a body region coupled between a first source/drain region and a second source/drain region;

evaporation depositing a metal alloy layer on the body region, wherein at least a portion of the alloy layer is amorphous;

oxidizing the metal alloy layer to form a metal oxide layer on the body region; and coupling a gate to the metal oxide layer.

- 52. (Withdrawn) The transistor of claim 51, wherein evaporation depositing the metal alloy layer includes evaporation depositing cobalt and titanium.
- 53. (Withdrawn) The transistor of claim 51, wherein evaporation depositing the metal alloy layer includes evaporation depositing by electron beam evaporation.
- 54. (Withdrawn) The method of claim 51, wherein oxidizing the metal alloy layer includes oxidizing using a krypton (Kr)/oxygen (O2) mixed plasma process.
- 55. (Previously Presented) A method of forming a gate oxide on a transistor body region, comprising:

electron beam evaporation depositing a metal alloy layer on the body region wherein at least a portion of the alloy layer is amorphous; and

oxidizing the metal alloy layer to form a metal oxide layer on the body region.

56. (Currently Amended) A method of forming a gate oxide on a transistor body region, comprising:

Serial No. 10/028643

Filed: December 20, 2001

Title: LOW-TEMPERATURE GROWN HIGH QUALITY ULTRA-THIN CoTiO3 GATE DIELECTRICS

evaporation depositing an alloy layer including cobalt and titanium on the body region, wherein substantially all of the alloy layer is amorphous; and

oxidizing the metal alloy layer to form a metal oxide layer on the body region.

- 57. (Previously Presented) The method of claim 56, wherein oxidizing the metal alloy layer includes oxidizing with atomic oxygen.
- 58. (Previously Presented) The method of claim 56, wherein oxidizing the metal alloy layer includes oxidizing using a krypton (Kr)/oxygen (O<sub>2</sub>) mixed plasma process.
- 59. (Currently Amended) A method of forming a gate oxide on a transistor body region, comprising:

evaporation depositing an alloy layer including cobalt and titanium on the body region, wherein at least a portion of the alloy layer is amorphous; and

oxidizing the metal alloy layer using a krypton(Kr)/oxygen (O<sub>2</sub>) mixed plasma process to form a metal oxide layer on the body region.

- 60. (Previously Presented) The method of claim 59, wherein evaporation depositing the metal alloy layer includes evaporation depositing by electron beam evaporation.
- 61. (Previously Presented) The method of claim 59, wherein electron beam evaporation depositing the metal alloy layer includes electron beam evaporation of a single metal alloy target.
- 62. (Previously Presented) A method of forming a gate oxide on a transistor body region, comprising:

evaporation depositing an alloy layer including cobalt and titanium on the body region wherein at least a portion of the alloy layer is amorphous; and

oxidizing the metal alloy layer to form a metal oxide layer on the body region.

Title: LOW-TEMPERATURE GROWN HIGH QUALITY ULTRA-THIN CoTiO3 GATE DIELECTRICS

- 63. (Previously Presented) The method of claim 62, wherein evaporation depositing the metal alloy layer includes evaporation depositing by electron beam evaporation.
- 64. (Previously Presented) The method of claim 62, wherein electron beam evaporation depositing the metal alloy layer includes electron beam evaporation of a single metal alloy target.
- 65. (Previously Presented) A method of forming a gate oxide on a transistor body region, comprising:

evaporation depositing an alloy layer including cobalt and titanium on the body region wherein at least a portion of the alloy layer is amorphous; and

oxidizing the metal alloy layer using a krypton(Kr)/oxygen (O<sub>2</sub>) mixed plasma process to form a metal oxide layer on the body region.

- 66. (Previously Presented) The method of claim 65, wherein oxidizing the metal alloy layer includes oxidizing with atomic oxygen.
- 67. (Previously Presented) The method of claim 65, wherein oxidizing the metal alloy layer includes oxidizing using a krypton (Kr)/oxygen (O<sub>2</sub>) mixed plasma process.